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1.   (original) A method for the three-dimensional surface reconstruction of an object comprising the steps of:

  (a)   obtaining a first set of images of the object having a first structured pattern on the surface thereof, and determining correspondence of image points between images of said first set of images;

  (b)   obtaining a second set of images of the object having a second structured pattern thereon, and labeling said second structured pattern between images of said second set of images based on the correspondence determined in (a);

  (c)   matching elements between images of said second set of images based on the labeling determined in (b); and

  (d)   determining spatial coordinates of the object from matched elements of said images of said second set of images in (b).

2.   (original) The method according to claim 1, wherein step (a) comprises the steps of

    (A)   obtaining said first set of images of said object, wherein said first structured pattern is defined by means of a uniquely coded structured pattern of structured light illuminated on the object; and

    (B)   finding correspondence between image points of images of said first set of images by mapping coordinates of one image on at least one other image based on coding related to the first structured pattern.

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3. (original) The method according to claim 2, wherein said second structured pattern comprises a periodic structured pattern illuminated on the object.

4. (original) The method according to claim 3, wherein said first set of images comprises at least two images at different angles with respect to said object.

5. (original) The method according to claim 4, wherein said at least two images are captured as images.

6. (original) The method according to claim 5, wherein said at least two images are captured substantially simultaneously.

7. (original) The method according to claim 4, wherein one image of said first set of images comprises said uniquely coded structured pattern and at least one other image of said first set of images is captured as an image.

8. (original) The method of claim 4, wherein said uniquely coded structured pattern comprises a two dimensional array having a random or pseudo random distribution of black and white elements.

9. (original) The method according to claim 7, wherein a pattern matching technique is used for finding correspondence of image points in step (a).

10. (original) The method according to claim 3, wherein said second set of images comprises at least two images at different angles with respect to said object.

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11.   (original) The method according to claim 10, wherein said at least two images are captured as images.

12.   (original) The method according to claim 11, wherein said at least two images are captured substantially simultaneously.

13.   (original) The method according to claim 10, wherein one image of said second set of images comprises said periodic pattern and at least one other image of said second set of images is captured as an image.

14.   (original) The method according to claim 10, wherein said periodic pattern comprises a first plurality of stripes of a first intensity or color intercalated with respect to a second plurality of stripes of a second intensity or color.

15.   (original) The method according to claim 14, wherein said first plurality of stripes comprise white pixels and said second plurality of stripes comprise black pixels.

16.   (original) The method according to claim 14, wherein:-
    (i)   a first element in a first image of said second set of images is associated according to a first association technique with a first image point of a first image of said first set of images;
    (ii) a second image point of a second image of said first set of images having correspondence with said first image point is determined; and

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(iii) said second image point is associated with a second element of a second image of said second set of images according to a second association technique, wherein said second element matches said first element.

17. (original) The method according to claim 16, wherein according to said first association technique, said first element is an image element in substantially the same spatial location as the said first image point relative to their respective images.

18. (original) The method according to claim 16, wherein according to said second association technique, said second element is an image element in a spatial location relative to its image that is at or in close proximity to the location of said second image point relative to its image.

19. (original) The method according to claim 16, wherein said first element comprises the centre point of a row of pixels of a said stripe of said first plurality of stripes comprised in said first image of said second set of images.

20. (original) The method according to claim 16, wherein said second element comprises the centre point of a row of pixels of a said stripe of said first plurality of stripes comprised in said second image of said second set of images.

21. (original) The method according to claim 1, wherein:-
    (i) a first element in a first image of said second set of images is associated according to a first association

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technique with a first image point of a first image of said first set of images;

(ii) a second image point of a second image of said first set of images having correspondence with said first image point is determined; and

(iii) said second image point is associated with a second element of a second image of said second set of images according to a second association technique, wherein said second element matches said first element.

22. (original) The method according to claim 21, wherein according to said first association technique, said first element is an image element in substantially the same spatial location as the said first image point relative to their respective images.

23. (original) The method according to claim 21, wherein according to said second association technique, said second element is an image element in a spatial location relative to its image that is at or in close proximity to the location of said second image point relative to its image.

24. (original) The method according to claim 21, wherein said first element comprises the centre point of a row of pixels of a said stripe of said first plurality of stripes comprised in said first image of said second set of images.

25. (original) The method according to claim 21, wherein said second element comprises the centre point of a row of pixels of a said stripe of said first plurality of stripes comprised in said second image of said second set of images.

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26.   (original) The method according to claim 1, wherein step (d) is based on triangulation techniques.

27.   (original) The method according to claim 1, wherein step (d) is based on epipolar reconstruction techniques.

28.   (original) A method for matching points between images of a first set of images of an object comprising the steps of:

    (a)   obtaining said first set of images of the object having a first structured pattern thereon;

    (b)   obtaining a second set of images of the object having a second structured pattern on the surface thereof, and determining correspondence of image points between images of said second set of images;

    (c)   labeling elements of said first structured pattern between images of said first set of images based on the correspondence determined in (b);

    (d)   matching points comprised in elements between elements labeled in (c).

29.   A system for the three-dimensional surface reconstruction of an object comprising:

    (I)   a projector adapted for selectively illuminating said object with a first structured pattern and a second structured pattern;

    (II) at least one camera for obtaining images of said object when illuminated with said first structured pattern and a second structured pattern;

    (III) microprocessor means for determining three-

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dimensional surface topology of said object based on said images

30. (canceled)

31. (canceled)

32. (original) A control unit for use in the three-dimensional surface reconstruction of an object, said control nit being preprogrammed to carry out

    (i) processing data indicative of a first set of images of the object having a first structured pattern on the surface thereof, and determining correspondence of image points between images of said first set of images;

    (ii) using said correspondence for processing a second set of images of the object having a second structured pattern thereon to match elements of said second structured pattern between images of said second set of images;

    (iii) analyzing the matched elements to determine spatial coordinates of the object.